

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/18902

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(7) : C12N 15/29, 15/82, 15/87; A01H 5/00, 5/10  
 US CL : 800/278, 290, 298, 320.2; 536/23.1, 23.6; 435/320.1, 468

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
 U.S. : 800/278, 290, 298, 320.2; 536/23.1, 23.6; 435/320.1, 468

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
 WEST, STN (agricola, biosis, caplus, caba) SEQ ID NO:2, DNA encoding SEQ ID NO:3

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	NCBI database for nucleotide sequences, National Center for Biotechnology Information, National Library of Medicine, NIH (Bethesda, MD, USA) LIN, X. et al. Accession number AC079281, January 2001. 32% identical to SEQ ID NO:2.	27
A	CERDAN et al. Regulation of flowering time by light quality. Nature. 19 June 2003, Vol. 423, No. 6942, pages 881-885, entire document.	1-13, 23-36 and 38
A	US 2003/0074699 A1 (COUPLAND et al) 17 April 2003 (17.04.2003), entire document.	1-13, 23-33, 35-36 and 38
X		34

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier application or patent published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means		
"P" document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search

24 May 2005 (24.05.2005)

Date of mailing of the international search report

21 JUN 2005

Authorized officer

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### Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2.  Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
  
3.  Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

### Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:  
Please See Continuation Sheet

1.  As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2.  As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3.  As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
  
4.  No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: 1-13, 23-36 and 38 including SEQ ID NO:2 and 3

Remark on Protest  The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

Form PCT/ISA/210 (continuation of first sheet(2)) (January 2004)

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**BOX II. OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING**

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claim(s) 1-13, 23-36 and 38, drawn to a method of modulating at least one photosensitive trait in a plant comprising altering the level of phytochrome and flowering time 1 (PFT1) in a plant, wherein the PFT1 protein has the amino acid sequence set forth in SEQ ID NO:3 encoded by SEQ ID NO:2; a transgenic plant having at least one modulated photosensitive trait as compared to a wild-type plant, comprising a nucleic acid encoding a PFT1 gene, recombinant nucleic acid sequence comprising SEQ ID NO:2 and method of producing a recombinant nucleic acid encoding a PFT1 protein.

Group II, claim(s) 14-22, drawn to a method of modulating a photosensitive trait in a plant cell or plant comprising an inhibitor of a PFT1 gene.

Group III, claim(s) 37, drawn to an isolated protein comprising SEQ ID NO:3.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

The inventions listed as Groups I-III do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: a method of modulating at least one photosensitive trait in a plant is taught in the prior. Tadege et al (2001, *The Plant Journal* 28(5):545-553) disclose isolated FLOWERING LOCUS C (FLC) related sequences from *Brassica napus*, wherein expression of each of the five sequences in *Arabidopsis* delayed flowering (decreased flowering-time) compared to wild-type plants. The office interprets flowering-time to be a photosensitive trait based on Applicants' definition of "photosensitive trait" (See page 6, paragraph 27).

In addition, the claims are not linked by a single technical feature because they are each drawn to products and processes not shared by the other. The method of modulating a photosensitive trait comprising overexpressing a gene in a plant of Group I, is not shared by the method of modulating a photosensitive trait comprising an inhibitor of a PFT1 gene of Group II, or which is not shared by the protein of Group III.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.